

Remarks/Arguments:

Claims 28-62 are pending. Claims 28-62 stand rejected.

Objections to the Drawings

The Office Action at page 2, paragraph 2, objected to the claims under 37 CFR 1.83(a) because "Every feature of the invention specified in the claims is not shown ..." Applicants submitted amended Figure 9 and new Figure 10 in response to the previous Office Action that shows some of the elements set forth in paragraph 2 of the Office Action. Regarding each of these elements, they are well-described in the specification as originally filed, e.g., at page 7, lines 3-19. Submitted herewith are amendments to the specification adding reference numbers to the originally filed disclosure.

Regarding other of the claimed elements, applicant respectfully traverses the objection. Specifically:

- 1) the connection means with the exterior is shown in Figure 1 as element 13 and described at page 6, lines 14-15;
- 2) the heating means is shown in Figures 1-8 for example and described in the specification at page 7, line 20 through page 9, line 31;
- 3) with respect to the electrical resistance of claim 50, this element is also shown in the figures and described in the specification. Applicant respectfully directs the Examiner's attention to Figures 1-8 and the specification at page 6, line 6 through page 10, line 17;
- 4) with respect to the objection to the Peltier cell claimed in claim 61, applicant traverses this objection and believes that no further amendment to the drawings are necessary. Specifically, in accordance with 37 CFR 1.83(a) "conventional features disclosed in the specification and claims, where their detailed illustration is not essential for the proper understanding of the invention, should be illustrated in the drawing in the form of a ... labeled representation..." (emphasis added) Applicant respectfully submits that the original labeled figures meet this requirement and requests therefore that the objection be withdrawn;
- 5) regarding the objection to claim 62, applicant respectfully directs the Examiner's attention to Figure 9, specifically nozzle 20 and the associated description in the specification

Amendment Dated April 23, 2008

Reply to Final Office Action of December 26, 2007

regarding the heating or air conditioning system of claim 62, applicant has amended Figure 9 to show the air conditioning system 30 although applicant believes that such an amendment is unnecessary.

Applicant's note that in response to the above arguments in the previous response the Office did not provide any comment or counter argument, but rather repeated the objection for the first Office Action. In view of the above, applicant respectfully requests that the Office explain the reason why the previous arguments were not considered or withdraw the objections to the drawings.

Rejections Under 35 U.S.C. § 102

Claims 28 and 29 are rejected under 35 U.S.C. 102(e) as being anticipated by Fujikawa et al. (US6959994). Applicant respectfully traverses this rejection, for the reasons set forth below.

Applicant's invention as recited in claim 28, includes features not disclosed or suggested by Fujikawa, namely:

An image acquisition unit ... comprising ...a casing (1) comprising a protected interior, said casing defining a window (2) closed by a transparent element (3) and supporting means (4) defined by part of said casing for supporting an optical system (5) inside said casing and facing said window ...

... image detection means (6) located in said casing, facing said optical system (5) and associated with connection means with the exterior, for supplying electrical signals and for bidirectional signal interchange ...

... heating means for providing thermal energy to said transparent element, or to an adjacent zone thereto, said heating means comprising a heating element disposed along at least a portion of a periphery of said transparent element. (Emphasis and element numbers added)

These features are described in applicant's specification, for example, at page 6, line 6 through page 7, line 2.

Fujikawa is relied upon as "[disclosing] an image acquisition unit (5) with a heating device for monitoring an exterior of a vehicle, comprising...a transparent element (7)...image detection means...with connection means with the exterior, for supplying electrical signal and/or for bidirectional signal interchange; and heating means (15) for providing thermal energy to said transparent element..." Applicant respectfully disagrees. The relied upon casing (2) in Fujikawa is an exterior mirror casing and not the casing of an image acquisition unit.

Further, Fujikawa fails to disclose or suggest that the heating means comprising a heating element disposed along at least a portion of a periphery of said transparent element. Rather, Fujikawa discloses a heating wire 14 drawn on the transparent film in a "meandering pattern" thus interfering with the view of the imager. See Fig. 4 of Fujikawa.

In contrast, applicant's invention as recited in claim 28 includes i) a casing of an image acquisition unit comprising a protected interior, the casing defining a window closed by a transparent element and supporting means defined by part of the casing for supporting an optical system inside the casing and facing the window, ii) image detection means located in the casing, facing the optical system and associated with connection means with the exterior, for supplying electrical signals and for bidirectional signal interchange and iii) heating means for providing thermal energy to said transparent element, or to an adjacent zone thereto, the heating means comprising a heating element disposed along at least a portion of a periphery of the transparent element.

It is because applicant has included the features of i) a casing of an image acquisition unit comprising a protected interior, the casing defining a window closed by a transparent element and supporting means defined by part of the casing for supporting an optical system inside the casing and facing the window, ii) image detection means located in the casing, facing the optical system and associated with connection means with the exterior, for supplying electrical signals and for bidirectional signal interchange and iii) heating means for providing thermal energy to said transparent element, or to an adjacent zone thereto, the heating means comprising a heating element disposed along at least a portion of a periphery of the transparent element, that applicant is able to provide an image acquisition unit for monitoring the exterior of a vehicle that is able to do so in adverse weather and humidity conditions. Fujikawa fails to achieve these advantages because Fujikawa does not include i) a casing of an image acquisition unit comprising a protected interior, the casing defining a window closed by a transparent element and supporting means defined by part of the casing for supporting an optical system

Amendment Dated April 23, 2008

Reply to Final Office Action of December 26, 2007

inside the casing and facing the window, ii) image detection means located in the casing, facing the optical system and associated with connection means with the exterior, for supplying electrical signals and for bidirectional signal interchange and iii) heating means for providing thermal energy to said transparent element, or to an adjacent zone thereto, said heating means comprising a heating element disposed along at least a portion of a periphery of the transparent element.

Applicant respectfully submits, therefore, that the rejection of claim 28 as being anticipated by Fujikawa should be withdrawn and the claim allowed.

Claim 29 depends upon claim 28 and, thus, is likewise not subject to rejection for at least the reasons set forth above with respect to claim 28.

The Office Action sets forth at page 5, paragraph 6, "Claims 28-31, 33, 37 and 59 are rejected under 35 U.S.C. 102(b) as being anticipated by Schofield et al. (US6498620)."

Applicant respectfully traverses this rejection for the reasons set forth below.

Schofield is relied upon as "[disclosing] an image acquisition unit (14, 16) with a heating device (168) for monitoring an exterior of a vehicle, comprising: a casing comprising a protected interior, a window closed by a transparent element and supporting means for supporting an optical system facing said window; image detection means located in said casing, facing said optical system and associated with connection means with the exterior, for supplying electrical signal and/or for bidirectional signal interchange; and heating means for providing thermal energy to said transparent element, or to an adjacent zone thereto..."

Applicant respectfully disagrees with this overly broad interpretation of Schofield. Specifically, Figure 20 (relied upon by the Office as the basis for the rejection) and the accompanying description at col. 20, lines 13-40 fail to disclose any of applicant's claimed structural features. Furthermore, there is no disclosure or suggestion that the heater 168 provides thermal energy to a transparent element associated with the image detector. Rather, Schofield only discloses that heater 168 may be used "to stabilize the temperature of the device in low ambient temperature conditions." Further, Schofield fails to disclose or suggest that the heating means comprises a heating element disposed along at least a portion of a periphery of the transparent element.

Amendment Dated April 23, 2008

Reply to Final Office Action of December 26, 2007

Therefore, Schofield fails to disclose or suggest a casing comprising a protected interior, the casing defining a window closed by a transparent element and supporting means defined by part of the casing for supporting an optical system inside the casing in facing the window and image detection means located in the casing, facing the optical system and associated with connection means with the exterior, for supplying electrical signals and for bidirectional signal interchange and heating means comprising a heating element disposed along at least a portion of a periphery of said transparent element as claimed in claim 28 or heating means comprising at least one element of a heat conductive material to transfer heat from a zone of the casing, where electronic components of said image detection means are located, to a zone adjacent the transparent element as claimed in claim 59.

Because Schofield fails to disclose each and every feature of applicant's invention of at least claims 28 and 59, applicant respectfully submits that the rejection of claims 28 and 59 as being anticipated by Schofield et al. is improper, should be withdrawn and the claims allowed.

Regarding claim 37, there is absolutely no disclosure or suggestion in Schofield that the electrical heater comprises at least one electrical resistance directly applied on the transparent element. Applicant notes that the Office relies upon Figure 20 for showing this feature but the applicant is unable to find any reference in Figure 20 or in the accompanying description in the specification that discloses or suggests that the heater is comprised of at least one electrical resistance directly applied on the transparent element. Applicant respectfully submits, therefore, that the rejection of claim 37 is improper, should be withdrawn and the claim allowed.

Regarding claims 29-31 and 33, because these claims depend upon allowable claim 28 they are likewise not subject to rejection for at least the reasons set forth above with respect to claim 28.

Rejections Under 35 U.S.C. § 103

Claims 32, 34-36, 38-58 and 60-61 are rejected as unpatentable over Schofield either alone or in combination with one or more of Dokken, Flaishans, Suman, Jones, Smucker, and Hirmatsu. These rejections were addressed by the applicant in the previous response and are not repeated. Additionally, because each of these references fail to make up for the deficiencies

of the primary reference Schofield, applicant submits that claims 32, 34-36, 38-58 and 60-61 are allowable at least for the reasons set forth above with respect to claim 28 from which they depend.

The Office Action sets forth at page 13, paragraph 16, "Claim 62 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schofield...in view of Mazzilli (US6333759) or Uskolovsky et al. (US6738088)." Applicant respectfully submits that this rejection is overcome by the amendments to the claims for the reasons set forth below.

Applicant's invention as recited in claim 62 includes features not disclosed or suggested by Schofield in combination with Mazzilli or Uskolovsky, namely:

... a casing adapted for mounting on an exterior of said vehicle comprising a protected interior, said casing defining a window closed by a transparent element and supporting means defined by part of said casing for supporting an optical system inside said casing and facing said window ...

... image detection means located in said casing, facing said optical system and associated with connection means with the exterior, for supplying electrical signals and for bidirectional signal interchange ...

... said heating means comprises an air expulsion nozzle located on the exterior of said vehicle near the transparent element, and connected to a heating or air conditioning system of a vehicle's compartment ... (Emphasis added)

These features are described in applicant's specification, for example at page 10, lines 18-34.

Mazzilli and Uskolovsky are each relied upon as "[disclosing] a camera [] mounted to a windshield of an automobile. It is inherent to have defroster and built in nozzles to blow air to the windshield in order to create a warm air barrier in front of the external face of the transparent element." Applicants respectfully disagree with the Office, but in order to expedite prosecution have amended claim 62 to further distinguish over the cited prior art. Both Mazzilli and Uskolovsky fail to disclose or suggest an air expulsion nozzle located on the exterior of the

vehicle near the transparent element, and connected to a heating or air conditioning system of a vehicle's compartment.

In contrast, applicant's invention requires i) a casing adapted for mounting on an exterior of the vehicle comprising a protected interior, the casing defining a window closed by a transparent element and supporting means defined by part of the casing for supporting an optical system inside the casing and facing the window, ii) image detection means located in the casing, facing the optical system and associated with connection means with the exterior, for supplying electrical signals and for bidirectional signal interchange, and iii) the heating means comprises an air expulsion nozzle located on the exterior of the vehicle near the transparent element, and connected to a heating or air conditioning system of a vehicle's compartment.

It is because applicant has included the features of i) a casing adapted for mounting on an exterior of the vehicle comprising a protected interior, the casing defining a window closed by a transparent element and supporting means defined by part of the casing for supporting an optical system inside the casing and facing the window, ii) image detection means located in the casing, facing the optical system and associated with connection means with the exterior, for supplying electrical signals and for bidirectional signal interchange, and iii) the heating means comprises an air expulsion nozzle located on the exterior of the vehicle near the transparent element, and connected to a heating or air conditioning system of a vehicle's compartment, that applicant is able to provide an image acquisition unit for monitoring the exterior of a vehicle that is able to do so in adverse weather and humidity conditions. The cited prior art fails to achieve these advantages because Schofield, Mazzilli or Uskolovsky either alone or in any combination do not include i) a casing adapted for mounting on an exterior of the vehicle comprising a protected interior, the casing defining a window closed by a transparent element and supporting means defined by part of the casing for supporting an optical system inside the casing and facing the window, ii) image detection means located in the casing, facing the optical system and associated with connection means with the exterior, for supplying electrical signals and for bidirectional signal interchange, and iii) the heating means comprises an air expulsion nozzle located on the exterior of the vehicle near the transparent element, and connected to a heating or air conditioning system of a vehicle's compartment.

Applicant respectfully submits, therefore, that the rejection of claim 62 as being unpatentable over Schofield in view of either Mazzilli or Uskolovsky should be withdrawn and the claim allowed.

Appn. No.: 10/526,998
Amendment Dated April 23, 2008
Reply to Final Office Action of December 26, 2007

TJA-102US

Claims 63-66 are added. Basis for these claims may be found in Applicant's specification as originally filed at page 6, lines 26-27 and page 9, lines 1-26. No new matter is added. Applicant respectfully requests that claims 63-66 be entered and considered.

In view of the amendments and remarks set forth above, applicant submits that the above-identified application is in condition for allowance which action is respectfully requested.

Respectfully submitted,

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